

ATTORNEY DOCKET NO.  
NC13800 (9021.074)

PATENT  
Customer ID No. 30973



IN THE SPECIFICATION

Please cancel the paragraphs on page 15, lines 23-31 amend the specification as follows:

Page 9, lines 21-31, amend the existing paragraph by substituting therefor the following substitute paragraph:

AI  
The communication system 10 includes network infrastructure, here shown to include an MSC (mobile switching center) 22. The MSC 22 is coupled to a BSC (base station controller) 24 which, in turn, is coupled to a BTS (base transceiver station) 26. The BTS 26 defines a cell of the communication system 10 within which communication signals transmitted by the BTS 26 transmitted upon a forward link channel can be received by a mobile station 12, and within which communication signals transmitted by the mobile station 12 can be received by the BTS 26. Two-way communication is thereby effectuated with the mobile station 12 by way of a radio air interface which defines the radio link 14 between the network infrastructure and the mobile station 12.

Page 11, lines 21-29, amend the existing paragraph by substituting therefor the following substitute paragraph:

A2  
2003/11/20  
A mobile station 14 further includes a controller 84, formed of an ASIC (application specific integrated circuit), processing device, or combination thereof. The controller 84 includes functional elements which are operable pursuant to an embodiment of the present invention. Here, the controller is shown to include a

A2  
sub 37  
determiner 86 and a power controller 88. The determiner is coupled to the receive  
portion of the mobile station 12 to receive indications of signals detected by the receive  
portion of the mobile station. And, the power controller 88 is coupled to the determiner  
to receive indications of the determiner to receive indications of determinations thereat.

5 Page 12, lines 21-31, amend the existing paragraph by substituting therefor the  
following substitute paragraph:

A3  
10 In one implementation, and as illustrated, the determiner includes a signal-to-  
noise ratio (SNR) calculator 92 coupled to receive indications of signal strength levels  
of communication signals transmitted by the network infrastructure to the mobile  
station and also to receive indications of corresponding noise levels. The SNR  
calculator 92 calculates a signal-to-noise ratio, and provides an indication of the ratio  
calculated thereat to a calculator/comparator 94. The calculator/comparator compares  
the calculated ratio with a selected threshold value. If the signal-to-noise ratio is not  
greater than the selected threshold, the communication channel is determined to exhibit  
15 a deep fade condition. An indication of such determination is provided to the power  
controller.

Page 13, line 9 – Page 14, line 14, amend the existing paragraphs by substituting  
therefor the following substitute paragraphs:

20 In another embodiment, indications of a signal strength of a pilot signal  
generated by network infrastructure and broadcast to a mobile station, such as the  
mobile station 12, are provided to a pilot strength calculator and averager 95.

Indications of the signal strength of the pilot signal together with an average value over time are provided to the calculator/comparator 94. If ratios of the pilot signal strength relative to its average value over time is less than a selected threshold, as compared by the comparator 94, a determination is made that the communication channel exhibits a deep fade condition. And, indication of the determination is provided to the power controller 88. The power controller, responsive thereto, requests that subsequent communication signals transmitted to the mobile station be of reduced power levels, again until a determination is subsequently made that the communication channel no longer exhibits a deep fade condition.

10 In another implementation, and also as illustrated in the Figure, a derivative calculator 96 is utilized to calculate a first, or second, derivative of the pilot signal strength. Indications of the calculator derivative are provided to the calculator/comparator 94. The calculator/comparator 94 compares the calculator derivative with a selected value, such as a selected negative value. If the calculated value of the derivative is beyond, for instance, or more negative than the selected value, a determination is made that the communication channel exhibits a deep fade condition. An indication is provided to the power controller 88 to cause a request to be made that the power level of signals subsequently transmitted to the mobile station be reduced in power at least for the duration of the deep fade condition.

20 In another implementation, also illustrated in the Figure, a counter 97 maintains a count of power-up commands generated by the power controller to request power

level increases. If a selected number of power-up increase requests are successively generated, a deep fade condition on the communication channel is determined to be exhibited. Count values provided by the counter 97 are provided to the calculator/comparator. If a selected number, for example, twenty successive power-up commands are generated by the power controller 88, a determination is made that the communication channel exhibits a deep fade condition. Results of the determination are provided to the power 88, and the power controller generates power-down requests to reduce the power levels of communication signal subsequently transmitted by the network infrastructure.

IN THE DRAWINGS

Please amend the drawings by entering the substitute drawings enclosed herewith pursuant to 37 C.F.R. 1.121.

IN THE CLAIMS

Please amend claims 1, 3, 4, 10, 11, 16, and 17 by substituting therefor the following substitute claims:

1. (Amended) In a communication system having a sending station and a receiving station, the sending station for sending a communication signal upon a communication channel, to the receiving station, the communication channel susceptible to fading, an improvement of closed loop power control apparatus for selectively controlling power levels of the communication signal, said power control apparatus comprising: